

# Claims

- [c1] An x-ray detector comprising:
  - a plurality of pixels receiving x-rays;
  - at least one split scan line activating said plurality of pixels; and
  - at least one data line conducting charge indicative of said x-rays.
- [c2] A detector as in claim 1 wherein at least one data line comprises at least one non-split data line.
- [c3] A detector as in claim 1 wherein at least two data lines of said at least one data line are coupled to each other.
- [c4] A detector as in claim 1 wherein said plurality of data lines comprise:
  - a first set of data lines; and
  - a second set of data lines;wherein at least one data line from said first set of data lines is coupled to at least one data line from said second set of data lines.
- [c5] A detector as in claim 4 wherein each data line in said first set of data lines is coupled to a data line in said second set of data lines.

- [c6] A detector as in claim 4 wherein said at least one split scan line has a first pixel scan set and a second pixel scan set.
- [c7] A detector as in claim 6 wherein said first set of data lines correspond with said first pixel scan set and said second set of data lines correspond with said second pixel scan set.
- [c8] A detector as in claim 1 wherein said at least one split scan line is vertically stacked.
- [c9] A detector as in claim 1 wherein said at least one data line comprises:  
a first side coupled to a first set of pixels; and  
a second side coupled to a second set of pixels.
- [c10] An x-ray detector comprising:  
a plurality of pixels receiving x-rays;  
at least one scan line activating said plurality of pixels;  
and  
a plurality of data lines conducting charge indicative of said x-rays, said plurality of data lines having at least two data lines that are coupled to each other;  
wherein at least one data line of said plurality of data lines comprises;  
a first side coupled to a first set of pixels; and

a second side coupled to a second set of pixels.

- [c11] An x-ray system comprising:  
an x-ray detector comprising;  
a plurality of pixels receiving x-rays;  
at least one split scan line activating said plurality of pixels; and  
at least one data line conducting charge indicative of said x-rays;  
a readout circuit electrically coupled to said at least one data line and generating x-ray signals in response to said indication; and  
a controller electrically coupled to said readout circuit and generating an x-ray image in response to said x-ray signals.
- [c12] A system as in claim 11 wherein said at least one scan line comprises:  
a first set of scan lines; and  
a second set of scan lines.
- [c13] A system as in claim 12 further comprising:  
a first drive circuit coupled to said first set of scan lines;  
and  
a second drive circuit coupled to said second set of scan lines.

[c14] A system as in claim 13 wherein said first drive circuit and said second drive circuit comprise a plurality of scan drivers.

[c15] A system as in claim 14 wherein said at least one data line comprises at least one non-split data line.

[c16] A system as in claim 11 wherein said at least one data line comprises:  
a first set of data lines; and  
a second set of data lines.

[c17] A system as in claim 16 wherein at least one data line in said first set of data lines shares an integrator with at least one data line in said second set of data lines.

[c18] A method of operating an x-ray detector comprising:  
activating a plurality of pixels via at least one split scan line;  
receiving x-rays; and  
indicating extent of said x-rays via at least one data line.

[c19] A method as in claim 20 further comprising alternating pixels between a first half and a second half of said at least one split scan line.

[c20] A method as in claim 20 further comprising reading a first set of pixels coupled to a first half of said at least

one split scan line before reading a second set of pixels coupled to a second half of said at least one split scan line.

[c21] A method as in claim 20 further comprising reading pixels coupled to a first half of scan lines of said at least one split scan line before reading pixels coupled to a second half of scan lines of said at least one split scan line.

[c22] A method as in claim 20 further comprising alternating pixels on said at least one data line.

[c23] A method as in claim 20 further comprising combining at least two pixels of said plurality of pixels.

[c24] A method as in claim 20 further comprising analog binning of adjacent pixels of said plurality of pixels.

[c25] A method as in claim 24 wherein said adjacent pixels are on separate halves of said at least one split scan line.

[c26] A method as in claim 24 wherein said adjacent pixels are on a common data line.